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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,750	08/25/2006	Mridula Kapur	63500A	4399

109 7590 06/26/2008
The Dow Chemical Company
Intellectual Property Section
P.O. Box 1967
Midland, MI 48641-1967

EXAMINER

LENIHAN, JEFFREY S

ART UNIT	PAPER NUMBER
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4171

MAIL DATE	DELIVERY MODE
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06/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,750	Applicant(s) KAPUR ET AL.	
	Examiner Jeffrey Lenihan	Art Unit 4171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/17/2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Harlin et al, US5494965.

3. Regarding claims 1, 4, and 16; the independent claim 1 recites a film comprising at least one layer made from a polymer composition, wherein the composition comprises

a. from 35 to 65% by weight an ethylene polymer having a density greater than or equal to about 0.94 g/cm³, and a melt index from 0.001 to 1 grams/10 minutes (g/10 min)

b. from 35 to 65% by weight an ethylene polymer having a density greater than or equal to about 0.94 g/cm³, and a melt index from 50 to 700 g/10 min

Claim 4 depends from claim 1, and recites that (a) and (b) are each an ethylene homopolymer. Claim 16 depends from any of the preceding claims 1-15, and recites the limitation of a film comprising at least one layer made from the polymer composition of any one of the preceding claims.

4. Harlin et al discloses bimodal polyethylene compositions comprising a high molecular weight polyethylene and a low molecular weight polyethylene, and a method

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by which said compositions may be produced. Example 2 of US5494965 discloses a bimodal polyethylene composition comprising 43% by weight polyethylene having a density of 0.9488 g/cm^3 and a melt index of 0.5 g/10 min and 57% polyethylene having a density of 0.971 g/cm^3 and a melt index of 90 g/10 min, corresponding to components (a) and (b) as recited in the instant claim 1, respectively (see Table 1, Example 2). Each polymer component is a homopolymer synthesized via the polymerization of ethylene (Column 8, lines 29-32). Harlin further discloses that the compositions described in US5494965 are directed towards film, pipe, and blow molding products (Column 1, lines 9-12).

5. Regarding claim 2, the applicant recites that component (a) described in paragraph 3 of this Office Action comprises at least one homogeneously branched interpolymer having a molecular weight distribution (M_w/M_n) from 1.5 to 3.

6. Harlin discloses that the low molecular weight component used for the production of the composites described in US5494965 is characterized as having M_w/M_n within the range of 2.5-9, overlapping with the range disclosed in the instant claim 2. Further, while using ethylene homopolymers as a primary example, Harlin discloses that olefin polymers and copolymers synthesized from monomers such as ethylene, propylene, butane, hexane, and 4-methyl-1-pentene, may be utilized for the production of the bimodal composites disclosed in US5494965 (Column 4, lines 3-16). While US5494965 does not specify that the copolymer is homogeneously branched, the examiner notes that Harlin teaches that the catalyst used to synthesize the polymers are limited only to those capable of producing polymers of the required molecular weights, with Ziegler-

type catalysts or metallocene catalysts disclosed as suitable examples of catalytic agents (Column 6, lines 35-40). As it is known in the art that metallocene catalysts can be used to produce polymers with a highly homogeneous branching distribution, the examiner takes the position that one of ordinary skill in the art would recognize that Harlin discloses the synthesis and incorporation of a homogeneously branched ethylene polymer having the properties described in the instant claim within the bimodal polymer compositions described in US5494965.

Claim Rejections - 35 USC § 102/§ 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Harlin et al, US5494965.

9. Claim 3 depends from claim 1, and recites that the film layer has a water vapor transmission rate, WVTR, of less than or equal to about 0.3 g-mil/(100 in²xday), as measured in accordance with ASTM F 1249-90.

10. As discussed in paragraph 4 of this Office Action, Harlin discloses a bimodal polyolefin composition, useful for making films, comprising components of ethylene homopolymers which satisfy the criteria of density and melt index as set forth for the polymeric components of the composition of the instant application in the independent

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claim 1. Harlin does not disclose the WVTR of the said composition; however, the examiner takes the position that, as the polymeric compositions disclosed by both Harlin and the applicant comprise ethylene polymers having the same properties, one of ordinary skill in the art would expect that the properties, including the water vapor transmission rate, of a film comprising the ethylene composition disclosed by Harlin would not be materially different from those of a film as recited in the instant application.

11. MPEP § 2112 recites that "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency under 35 U.S.C. 102, on *prima facie* obviousness under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same..." as that required with respect to product-by-process claims. *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) As discussed in MPEP § 2113, once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983) The burden is therefore shifted to the applicant to prove that the properties used to define the interpolymers of the instant application would not be present in the block copolymers disclosed by Turner.

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12. Claims 5-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Moriguchi et al, US4536550.

13. Claim 5 recites an ethylene homopolymer or interpolymer composition having a percentage fraction of a gel permeation chromatography light scattering (GPC-LS) chromatogram which has a molecular weight equal to or greater than 1,000,000 as determined by GPC-LS that is at least 2.5% but not more than about 20% of the total area of the GPC-LS chromatogram.

14. Claim 6 recites an ethylene homopolymer or interpolymer composition having a percentage fraction of a gel permeation chromatography refractive index (GPC-RI) chromatogram which has a molecular weight equal to or greater than 10,000 as determined by GPC-RI that is at least 10% but not more than about 25% of the total area of the GPC-RI chromatogram.

15. Claim 7 depends from claim 5, and recites the additional limitation that the ethylene composition has a percentage fraction of a GPC-RI chromatogram which has a molecular weight equal to or less than about 10,000 as determined by GPC-RI which is at least 10% but not more than 25% of the total area of the GPC-RI chromatogram.

16. Claim 8 depends from claim 7, and recites the limitation that the component having a molecular weight of 1,000,000 or greater as determined by GPC-LS is equal to or less than 15% of the total area of the GPC-LS chromatogram, and the percentage fraction having a molecular weight equal to or less than about 10,000 as determined by GPC-RI is equal to or greater than 15% of the total area of the GPC-RI chromatogram.

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17. Claim 9 depends from claim 7, and recites that fraction having a molecular weight of 1,000,000 or greater represents 10% or less of the total area of the GPC-LS chromatogram, and the fraction having a molecular weight of 10,000 or less is equal to or greater than 20% of the total area of the GPC-RI chromatogram.

18. Claim 10 depends from claim 7, and recites the limitation that the fraction having a molecular weight of 10,000 or less is equal to or greater than about 15% of the total area of the GPC-RI chromatogram.

19. Claim 11 depends from claim 7, and recites the limitation that the fraction having a molecular weight of 10,000 or less is equal to or greater than about 20% of the total area of the GPC-RI chromatogram.

20. Claim 12 depends from claim 7, and recites the limitation that the fraction having a molecular weight equal to or greater than 1,000,000 is equal to or less than about 15% of the total area of the GPC-LS chromatogram.

21. Claim 13 depends from claim 8, and recites the limitation that the fraction having a molecular weight of 10,000 or less is equal to or greater than about 20% of the total area of the GPC-RI chromatogram.

22. Claim 14 depends from claim 7, and recites the limitation that the fraction having a molecular weight equal to or greater than 1,000,000 is equal to or greater than about 10% of the total area of the GPC-LS chromatogram.

23. Claim 15 depends from claim 14, and recites the limitation that the fraction having a molecular weight of 10,000 or less is equal to or greater than about 15% of the total area of the GPC-RI chromatogram.

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24. Moriguchi discloses a polyethylene composition comprising three specific types of polyethylenes. Polyethylene (A) has a molecular weight from 5,000 to 90,000; corresponding to the fraction having a molecular weight of 10,000 or less in the GPC-RI chromatogram as recited in the instant claims. Polyethylene (C) has a molecular weight within the range from 100,000 to 1,500,000, corresponding to the fraction having a molecular weight greater than or equal to 1,000,000 in the GPC-LS chromatogram as recited in the instant claims. Polyethylene (B) has a molecular weight from 50,000 to 500,000. All three polyethylenes may be homopolymers or copolymers of ethylene and a α -olefin (Column 1, line 59 to Column 2, line 16).

25. Moriguchi does not recite the percents of the GPC-RI or GPC-LS chromatogram which comprise polyethylene (A) or polyethylene (C) in the composition disclosed in US4536550. The examiner notes, however, that polyethylene (B) is disclosed as comprising 10-75% of the polymer composition, and that the ratio by weight of polyethylene (A) to polyethylene (C) is from 70:30 to 30:70 (Column 2, lines 13-16). Based on the molecular weights of the polyethylene components and their percent incorporation into the compositions disclosed in US4536550, the examiner takes the position that one of ordinary skill in the art would expect that the compositions disclosed by Moriguchi in US4536550 would not be materially different from those recited in the instant claims 5-15, and said compositions would display the same fractions when analyzed by GPC-LS or GPC-RI.

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26. Claim 16 recites a film comprising the polymer composition of any of the preceding claims. Moriguchi recites that the compositions disclosed in US4536550 may be used in film-making (Column 11, lines 18-20).

27. MPEP § 2112 recites that "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency under 35 U.S.C. 102, on *prima facie* obviousness under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same..." as that required with respect to product-by-process claims. *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980). As discussed in MPEP § 2113, once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983) The burden is therefore shifted to the applicant to prove that the properties used to define the interpolymers of the instant application would not be present in the block copolymers disclosed by Turner.

Conclusion

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bailey et al, US4461873 discloses resins comprising blends of low- and high molecular weight polyethylene polymers and their use in manufacturing films or in blow molding techniques.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Lenihan whose telephone number is (571)270-5452. The examiner can normally be reached on Mon-Thurs: 7:30-5:00, every other Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ling-Siu Choi/
Primary Examiner, Art Unit 1796

Jeffrey Lenihan
Examiner
Art Unit 4171

/JL/

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